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COUNTRY ANALYSIS BRIEFS

Canada

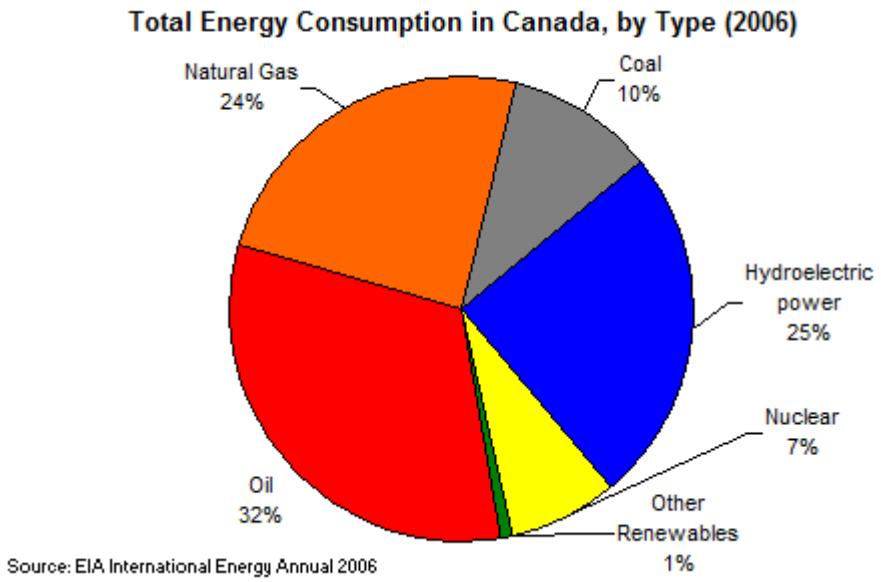
Last Updated: July 2009

Background

Canada is a net exporter of oil, natural gas, coal, and electricity. It is one of the most important sources for U.S. energy imports.

Canada has considerable natural resources and is one of the world's largest producers and exporters of energy. In 2006, Canada produced 19.3 quadrillion British Thermal Units (Btu) of total energy, the fifth-largest amount in the world. Since 1980, Canada's total energy production has increased by 87 percent, while its total energy consumption has increased by only 44 percent. Almost all of Canada's energy exports go to the United States, making it the largest source of U.S. energy imports. Canada is consistently among the top sources for U.S. oil imports, and it is the largest source of U.S. natural gas and electricity imports. Recognizing the importance of the energy trade between the two countries, both participate in the North American Energy Working Group, which seeks to improve energy integration and cooperation between Canada, the U.S., and Mexico.

In 2006, the largest source of energy consumption in Canada was oil (32 percent), followed by hydroelectricity (25 percent) and natural gas (24 percent). Both coal (10 percent) and nuclear (7 percent) constitute a smaller share of the country's overall energy mix. From 1986-2006, Canada's overall energy mix has remained relatively stable, though hydroelectricity has decreased from 31 percent to 25 percent.



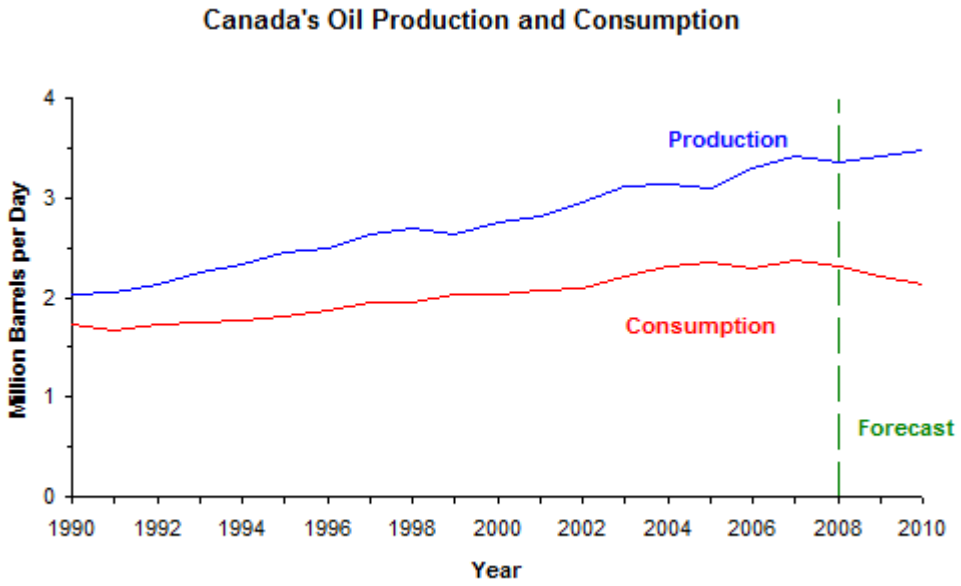
Source: EIA International Energy Annual 2006

Oil

Canada is consistently the top supplier of oil imports to the United States.

Overview

According to the *Oil and Gas Journal (OGJ)*, Canada had 178 billion barrels of proven oil reserves as of January 2009, second only to Saudi Arabia. The bulk of these reserves (over 95 percent) are oil sands deposits in Alberta, which are more difficult to extract and process than conventional crude oil. Canada is a net exporter of oil, with 2008 net exports of 1.0 million bbl/d. Almost all of the countries exports flow to the United States, and it is consistently the top supplier of U.S. oil imports.



Source: EIA Country Energy Profiles; Short Term Energy Outlook, July 2009

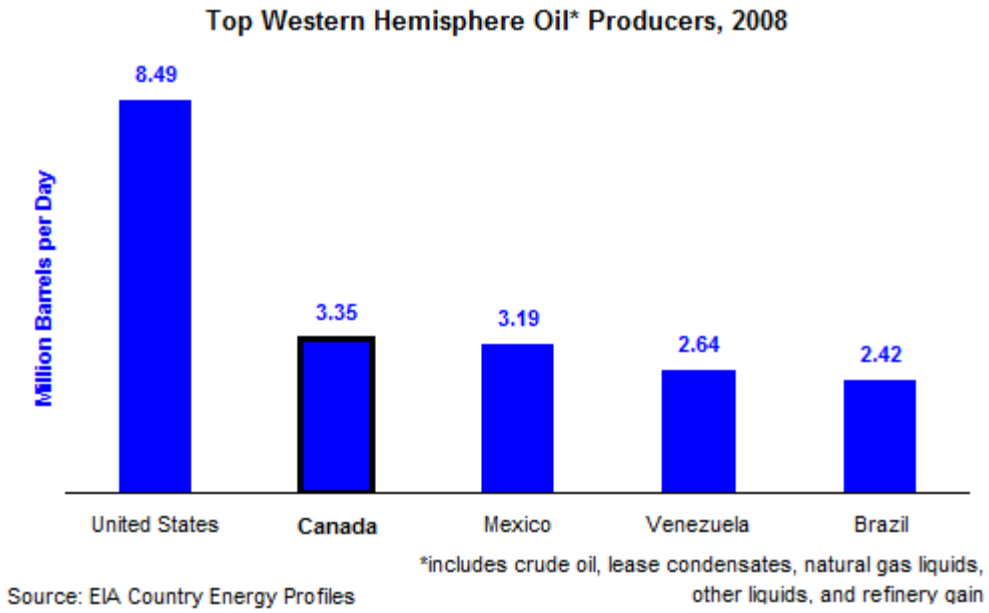
Canada's oil production (including all liquids) was 3.35 million bbl/d in 2008, down 0.07 million bbl/d from 2007. Despite the drop last year, Canada's oil production has steadily risen over the past decade, as new oil sands and offshore projects have come on-stream to replace aging, mature fields. Overall, EIA expects that oil sands production will increase even further in coming years and more than offset the decline in Canada's conventional crude oil production: according to the July 2009 *Short-Term Energy Outlook*, EIA expects Canadian oil production to increase to 3.41 million bbl/d in 2009 and 3.48 million bbl/d in 2010. Canada consumed an estimated 2.32

million bbl/d of oil in 2008. The country sends over 99 percent of its oil exports to the U.S., and it is consistently the top source of U.S. oil imports.

Sector Organization

Canada has a privatized oil sector that has witnessed consolidation in recent years. Large oil producers in the country include Imperial Oil, EnCana, Talisman Energy, Suncor, EOG Resources, Husky Energy, and Apache Canada. Much of the regulation of the oil industry occurs at the provincial level. In 2009, Suncor and Petro-Canada announced that they would merge, creating the largest oil producer in the country, as well as one of the largest producers of natural gas.

Canada's oil sands producers have attracted increasing attention from foreign oil companies, especially Asian companies seeking to satisfy growing demand in their countries and secure equity oil stakes. In July 2006, state-run Korea National Oil Corporation (KNOC) purchased the BlackGold bitumen deposit from Newmont for $250 million; BlackGold contains an estimated 250 million barrels of crude oil, and KNOC plans to bring 35,000 bbl/d of production onstream at the site by 2010. In 2005, China's Sinopec (through its Canadian subsidiary) purchased a 40 percent stake in Northern Lights, an oil sands project currently under development by Total; in 2009, Sinopec purchased an additional 10 percent stake in the project. In 2007, the Chinese National Petroleum company (CNPC) won exploration rights for a 260-acre tract in Alberta. The China National Offshore Oil Corporation (CNOOC) holds a stake in MEG Energy, which operates the Christina Lake project.



Exploration and Production

Canadian oil production comes mainly from three sources: the Western Canada Sedimentary Basin (WCSB); the oil sands deposits of northern Alberta; and offshore fields in the Atlantic Ocean. Alberta contains the largest share of Canada's oil production, as it holds the majority of oil sands deposits and the bulk of the WCSB. According to Statistics Canada, Alberta represented 68 percent of Canada's national oil production in 2008.

Western Canada Sedimentary Basin

The WCSB, underlying most of Alberta and parts of British Columbia, Saskatchewan, Manitoba and the Northwest Territories, has been the main source of Canadian oil production for the past 50 years. The age of many of the fields, though, has led to a steady decline in conventional oil production in the WCSB. Analysts predict that oil sands will supplant conventional sources as the focus of future oil production in western Canada. Conventional crude oil production in the WCSB represented around 39 percent of Canada's total crude oil production in 2008, down from about 65 percent in 1999.

Oil Sands

Oil sands contain deposits of bitumen, a heavy, viscous type of crude oil. There are two methods currently used to extract bitumen from the ground: open pit mining and *in situ* ("in place"). Open pit mining resembles conventional mining techniques and is effective in extracting oil sands deposits near the surface. However, the bulk (80 percent) of Canada's estimated oil sands deposits are too deep below the surface to use open pit mining. The second method, *in situ*,can reach these deeper deposits. *In situ* extraction involves the use of steam to heat and separate bitumen from the surrounding sands, causing it to pool closer to the surface. The bitumen is then pumped from these pools using horizontal drain wells. To date, Canadian oil sands producers have employed each method almost equally, but future production will likely shift to emphasize *in situ* extraction.

Once extracted, oil sands producers must add lighter hydrocarbons to the bitumen to allow it to flow through pipelines. Upgraders then process some of the bitumen into "synthetic crude," a relatively light, sweet form of crude oil that can be sold to a traditional oil refinery. Some of the bitumen is also sold in raw form, marketed to specialized refineries with deep conversion capacity. Some oil sands projects have integrated upgrading capacity, while others must send their raw bitumen production to another facility.

In 2008, oil sands production represented approximately half of Canada's total crude oil production. The Athabasca oil sands deposit in northern Alberta is one of largest oil sands deposits in the world. There are also sizable oil sands deposits on Melville Island in the Canadian Arctic, and two smaller deposits in northern Alberta near Cold Lake and Peace River. Most of the oil sands development to-date has focused on the Athabasca deposit.

The largest oil sands projects in the Athabasca area utilize open-pit mining. The Syncrude Project, operated by Canadian Oil Sands Limited, produced 290,000 bbl/d of synthetic crude oil in 2008. Suncor operates another large open-pit mining project in Alberta, which produced 228,000 bbl/d of crude oil in 2008. Finally, the Athabasca Oil Sands Project (AOSP), operated by Shell Canada, began production in 2002 and currently has a capacity of 155,000 bbl/d of raw bitumen. AOSP utilizes a facility adjacent to Shell's Scotford refinery to upgrade raw bitumen produced by the project. In early 2009, Canadian Natural Resources Limited (CNRL) brought the first phase of its Horizon project online, which includes a surface mining project and integrated upgrader, producing 110,000 bbl/d of synthetic crude oil.

The *in situ* oil sands projects in the Athabasca area are generally smaller and more numerous than their mining counterparts. In 2004, Suncor began operations at its Firebag project, which utilizes an *in situ* technology called steam-assisted gravity drainage (SAGD). Other SAGD projects include Petro-Canada's MacKay River and Dover; and EnCana's Foster Creek and Christina Lake. In late 2008, Nexen brought its Long Lake *in situ* project onstream, with production expected to ramp up to 60,000 bbl/d by the middle of 2010.

Outside of the Athabasca deposit, the largest oil sands project is Imperial Oil's Cold Lake *in situ* facility, with a capacity of 150,000 bbl/d. Also in the Cold Lake area, CNRL operates Primrose, while Husky operates the Tucker project. In the Peace River deposit, Shell Canada operates Cadotte Lake (11,000 bbl/d).

The combination of falling oil prices, unavailability of financing, and uncertainty about future world oil demand forced delays to several oil sands projects in late 2008. In October 2008, Petro-Canada delayed a final decision to proceed with the first stage (bitumen mining) of its Fort Hills Project and placed the second stage (bitumen upgrader) of the project on indefinite hold. Royal Dutch Shell also postponed an expansion of its oil sands project, while Suncor announced that it would reduce capital spending in 2009 by more than one-third. Some projects were still moving forward, however: in May 2009, Imperial Oil announced that it would proceed with the $8-billion first phase of its Kearl mining project, expected to come online in 2012 with production capacity of 100,000 bbl/d.

As an unconventional source of crude oil, oil sands present additional challenges compared to conventional oil production. In general, oil sands projects are more costly than conventional crude oil projects, and analysts estimate that the production of synthetic crude is only economically viable with relatively high crude oil prices. Second, the oil sands industry is heavily reliant upon water and natural gas, which is necessary in both the extraction of bitumen from oil sands and the upgrading of bitumen to synthetic oil. Even though there have been some efforts to reduce this dependence on natural gas and develop alternative means of *in situ* extraction, any increase in natural gas prices or sharp reduction in natural gas supply would have important repercussions for

the oil sands industry.

Even considering these concerns, most forecasts of world oil markets estimate that Canadian oil sands will become an increasingly important component of world oil supply. EIA's *International Energy Outlook 2009* (IEO) estimates that Canadian oil sands operators could produce 4.2 million bbl/d by 2030. Based on growth in oil sands production, Canada is expected to be an important source of growth in oil production from countries outside of the Organization of the Petroleum Exporting Countries (OPEC).

Offshore

Canada has three oil projects off its Atlantic coastline, all located in the Jeanne d'Arc Basin: Hibernia (135,000 bbl/d, PetroCanada), Terra Nova (116,000 bbl/d, PetroCanada), and White Rose (117,000 bbl/d, Husky). The basin has seen an increase in investment plans in recent years, with both White Rose and Hibernia announcing plans to expand production by incorporating satellite fields. Outside of the Jeanne d'Arc Basin, StatoilHydro announced in 2009 that it had discovered commercial quantities of crude oil at its Mizzen field in the Flemish Pass basin. In 2009, ExxonMobil submitted its proposed Hebron project for regulatory approval, which could come onstream as soon as 2017 and reach a peak production rate of 176,000 bbl/d. Operators at the Atlantic oil fields must contend with harsh natural conditions, including rough seas, seasonal icebergs, and extreme temperatures. These factors increase the difficulty and costs of oil production in the region.

Off the Pacific coast, industry experts believe that there could be sizable oil and natural gas reserves. However, there has been no production to date there, because of a federal ban on offshore oil activities in the Pacific Ocean.

Pipelines

Domestic System

An extensive pipeline system transports western Canadian oil to domestic and U.S. markets. There are two major oil pipeline operators in Canada: Enbridge Pipelines and Kinder Morgan Canada. Enbridge operates a 9,000-mile network of pipelines and terminals, delivering oil from Edmonton, Alberta, to eastern Canada and the U.S. Great Lakes region. Kinder Morgan operates the Trans Mountain Pipe Line (TMPL), which delivers oil mainly from Alberta west to refineries and terminals in the Vancouver, British Columbia area. The expansion of Alberta's oil sands industry has necessitated the construction of several new pipelines to transport diluted bitumen and synthetic crude to downstream facilities in the Edmonton area. New oil sands projects expected to come onstream in the coming years will likely necessitate an expansion of this network.

Export Pipelines

Canada has extensive oil pipeline connections with the United States. Enbridge maintains connections between major Canadian cities and Chicago, integrating the Canadian and U.S. components of its network. Enbridge also operates Spearhead, a 650-mile pipeline with a capacity of 125,000-bbl/d that links Chicago with Cushing, Oklahoma.

Kinder Morgan exports oil to the U.S. through an extension of the TMPL that reaches northern Washington. It also operates Express, a 790-mile, 170,000-bbl/d pipeline that links Hardisty, Alberta and Casper, Wyoming; from Casper, the company's 930-mile, 120,000-bbl/d Platte pipeline runs to Wood River, Illinois.

Any increase in oil sands production will require additional pipeline capacity to take that production to world markets. Along with expanding existing trunk lines, companies have proposed several new pipeline projects that would better link Alberta with the U.S. Gulf Coast, allowing oil sands producers greater access to the large concentration of refineries there:

- The Keystone system is currently under construction, with start-up scheduled for 2010. It will link Hardisty with Patoka, Illinois and Cushing, Oklahoma. The system will have an initial capacity of 435,000 bbl/d, later expanded to 590,000 bbl/d. The project also includes plans to later expand the system to 1.1 million bbl/d and extend it to Port Arthur, Texas. The Keystone project is a joint venture of TransCanada and ConocoPhillips.
- The 450,000-bbl/d, 770-mile Texas Access pipeline would link Illinois with Nederland, Texas. The project, a joint venture between Enbridge and ExxonMobil, could be online as early as 2012.
- Enbridge and BP proposed building a new system to connect the Chicago area with

Houston, using a combination of new, existing, and reversed pipelines. The system would have a capacity of 250,000 bbl/d and is also targeted for start-up in 2012.

- The Trailbreaker project would link Alberta to Portland, Maine (via Ontario and Quebec), allowing oil sands producers to sell into the Atlantic Basin or ship crude via tanker to the U.S. Gulf Coast. In January 2009, Enbridge announced that it was placing plans for the Trailbreaker project on hold, due to a lack of interest from oil shippers.

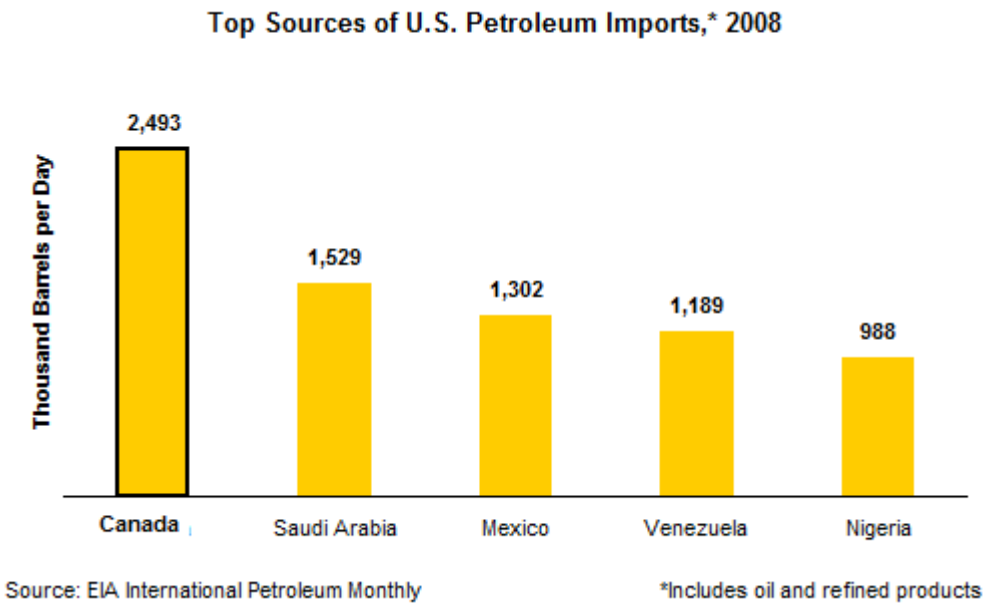
Enbridge has also floated plans for the construction of the 720-mile, 400,000-bbl/d Gateway pipeline from Edmonton to Kitimat, a deepwater port in British Columbia capable of supporting very large crude carriers (VLCC). The Gateway pipeline would facilitate the export of oil sands to Asia or California. Kinder Morgan has discussed plans to build a similar pipeline or upgrade the capacity of the TMPL.

Import Pipelines

Enbridge has proposed construction of the Southern Lights pipeline, which would transport 180,000 bbl/d of light hydrocarbons from Chicago to Edmonton. Oil sands operators in Alberta rely on these hydrocarbons to dilute bitumen so that it can flow through pipelines. Currently, the largest source of diluents comes from natural gas liquids; however the prospects of declining Canadian natural gas production mean that Alberta could face a diluents crunch without additional supplies.

Oil Exports and Imports

In 2008, Canada exported 2.5 million bbl/d of crude oil and refined products to the U.S., the single-largest source of U.S. oil imports and representing almost all of Canada's total oil exports. The largest share of U.S.-bound Canadian oil exports go to the Midwest (PAD District II), followed by the Rocky Mountains (PAD District IV). The bulk of Canadian exports to the U.S. have traditionally gone to PAD Districts II and IV, because these areas are well connected to Alberta by oil pipelines and not well served by coastal import terminals.



Even though Canada is a net oil exporter, it imports sizable quantities of crude oil and refined products. According to the International Energy Agency (IEA), Canada imported around 1.2 million bbl/d of crude oil and refined products in 2008. Canada's major population centers in the eastern part of the country are not well connected to its principle production facilities in the western interior, meaning that it is often easier to import oil along the coastlines rather than transport it domestically. Most oil imports come from Algeria (crude oil), Norway (crude oil) and the U.S. (refined products).

Refining

OGJ reported that Canada had 18 refineries in 2009, with total crude distillation capacity of 2.03

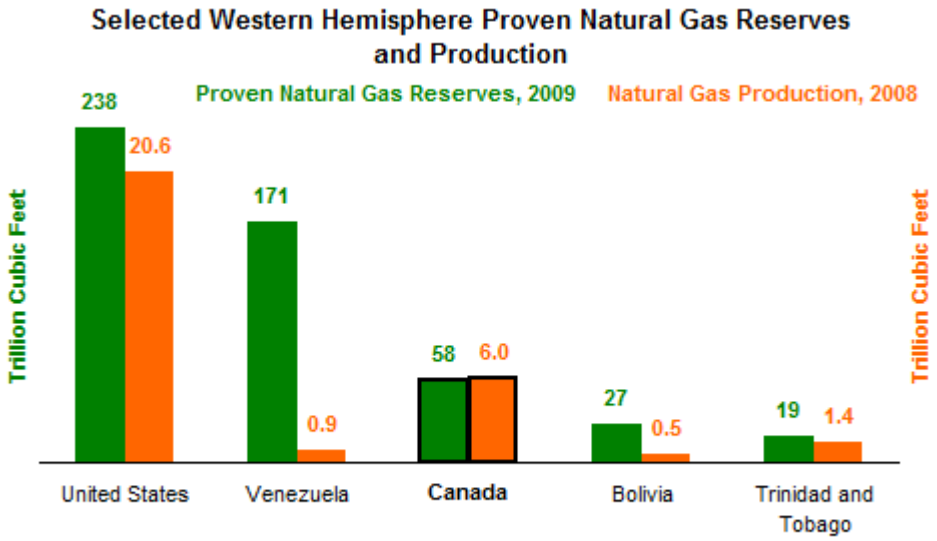
million bbl/d. By comparison, Canada consumed approximately 2.3 million bbl/d of refined products in 2008. While Alberta contains most of Canada's crude oil production, a large portion of its refining capacity resides in the more-populated eastern part of the country. Alberta has four refineries, with total capacity of 437,400 bbl/d, whereas Ontario and Quebec have a combined 919,600 bbl/d of refining capacity.

In January 2007, Irving Oil initiated the environmental review process for the construction of the 300,000 bbl/d Eider Rock refinery in Saint John, New Brunswick. The facility would occupy land near the company's existing refinery and the LNG terminal it jointly owns with Repsol YPF. In November 2008, Irving Oil announced that if the project proceeds it would be built in two phases. Each phase would cost at least $4 billion. The Eider Rock refinery is being designed as an export facility to service markets in the US Northeast and Europe. If completed, the facility would be the first grassroots refinery in Canada in over 20 years.

Natural Gas

Canada is one of the world's largest natural gas producers and exporters.

Oil and Gas Journal (OGJ) reports that Canada had 57.9 trillion cubic feet (Tcf) of proven natural gas reserves in January 2009. The country produced 6.6 Tcf of natural gas in 2007, while consuming 3.3 Tcf. Canada is the second largest producer of natural gas in the Western Hemisphere, after the United States. Canada is also an important source of the U.S. natural gas supply; in 2008, it exported 3.6 Tcf of natural gas to the United States, representing 16 percent of U.S. natural gas consumption and 90 percent of total U.S. natural gas imports that year. Most Canadian natural gas exports enter the United States through pipelines in Idaho, Montana, North Dakota, and Minnesota.



Source: Oil and Gas Journal; EIA International Energy Annual

Exploration and Production

Like the oil industry, Canada's natural gas production is concentrated in the WCSB, particularly in Alberta. Even though there have been some new conventional natural gas finds in the WCSB, many analysts predict that conventional natural gas production in the WCSB has reached its zenith. Future natural gas production will likely center on coal bed methane (CBM) and shale gas deposits in the WCSB, Arctic frontier natural gas deposits, the Deep Basin area, and offshore natural gas fields.

Western Canada Sedimentary Basin (WCSB)

Natural gas production in the WCSB grew rapidly in the 1990s, increasing over 60 percent during the decade. Alberta contains around 80 percent of Canada's total natural gas production. Additional production in the WCSB has begun to move away from Alberta towards new discoveries in British Columbia. There is also a small amount of natural gas production in the portion of the WCSB in Saskatchewan and Manitoba.

Offshore

The Scotian Basin, off the coast of Nova Scotia, is the center of natural gas production on the Atlantic coast. The Sable Offshore Energy Project (SOEP), led by ExxonMobil and Shell Canada, began production in 1999. SOEP encompasses numerous offshore fields, with the Alma and South Venture fields the latest brought on-line. SOEP has a production capacity of 400 MMcf/d of natural gas and 20,000 bbl/d of natural gas liquids (NGLs).

Offshore oil operators in Newfoundland predict that they could also produce sizable natural gas volumes from their reserves. The Hibernia and White Rose fields contain a combined 4 Tcf in recoverable natural gas reserves. Though there is no current natural gas production at either site, both ExxonMobil (Hibernia) and Husky Energy (White Rose) have stated that they could commence natural gas production in the future. The offshore basins in British Colombia contain an estimated 43.4 Tcf of possible natural gas reserves, though the previously-mentioned federal moratorium on drilling prevents any production activity in the area.

Arctic

The Mackenzie Delta, located in the Northwest Territories, holds an estimated 5-6 Tcf of recoverable natural gas reserves. Natural gas from the region could begin flowing to southern markets if natural gas companies can complete the Mackenzie Gas Pipeline on schedule (see below). There are three large, proven natural gas fields in the Mackenzie Delta: Imperial Oil's Taglu field (3 Tcf); ConocoPhillips' Parsons Lake field (1.8 Tcf); and the joint Shell Canada-ExxonMobil Niglintgak field (1 Tcf).

Unconventional Natural Gas Sources

CBM production is still in its infancy in Canada, with the first wells drilled only in 1997. There is a strong belief that CBM production will eventually replace some of the decline in conventional natural gas production. According to the Alberta Geological Service, there could be as much as 500 Tcf of CBM gas in place in Alberta alone. Shale gas is another potential source of unconventional natural gas production in Canada that is still in the early stages of development. According to industry sources, the Montney shale formation in British Columbia could contain 50 Tcf of shale gas. Another promising area of future development is the Utica shale in Quebec.

Pipelines

Domestic System

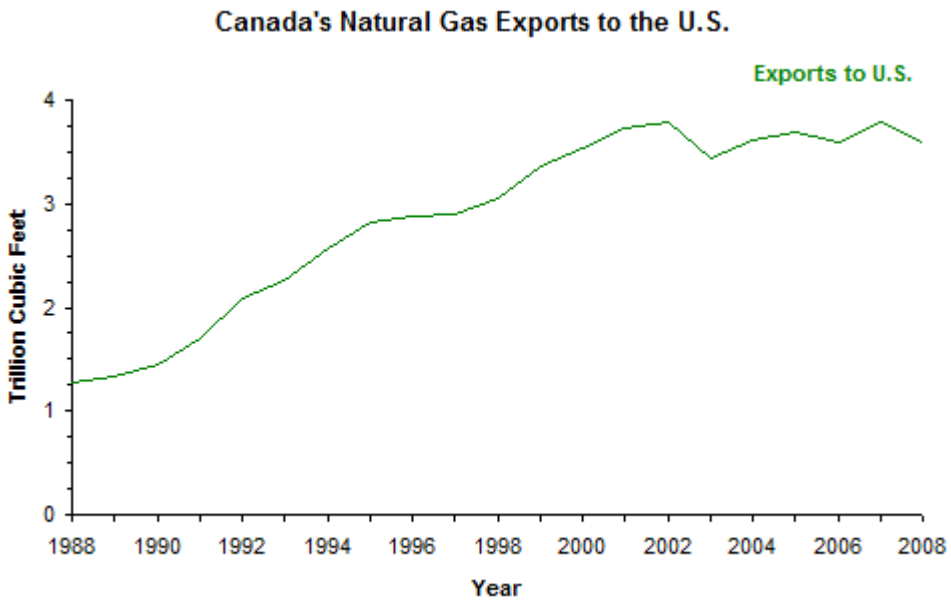
TransCanada Pipelines is the largest operator of natural gas pipelines in Canada. Its 25,600-mile network transports the bulk of Canada's natural gas production. Important parts of the TransCanada network include the 13,900-mile, 10.6-Bcf/d Alberta System, the 120-mile, 0.9-Bcf/d British Columbia System, the 8,900-mile, 7.2-Bcf/d Canadian Mainline, and the 600-mile, 3.0-Bcf/d Foothills System.

Mackenzie Valley Gas Pipeline

A consortium of natural gas companies, led by Imperial Oil, plan to build the Mackenzie Valley natural gas pipeline. The 760-mile, 1.2-Bcf/d pipeline would carry natural gas from inside the Arctic Circle to northern Alberta, where it would flow into the existing natural gas transportation system; there would also be a parallel pipeline to carry NGLs. Cost estimates have increased to a $17 billion. The federal panel charged with evaluating the environmental and social impact of the project planned to release its final report by the end of 2009.

Export Pipelines

Canada's natural gas pipeline system is highly interconnected with the United States. The 1,300-mile, 1.9-Bcf/d Gas Transmission Northwest pipeline runs from the British Columbia-Idaho border to the Oregon-California border, connecting TransCanada's western Canadian network to the U.S. domestic market. The 2,000-mile, 2.4-Bcf/d Great Lakes Gas Transmission pipeline runs from Emerson, Manitoba to St. Clair, Ontario, servicing Minnesota, Wisconsin, and Michigan. Running from the New York-Canada border to Long Island, the 400-mile, 0.9-Bcf/d Iroquois Gas Transmission System pipeline serves natural gas distribution networks in New York State. The 280-mile, 0.2-Bcf/d Portland Natural Gas Transmission System distributes natural gas from Quebec to greater New England. The 780-mile, 650-MMcf/d Maritimes and Northeast Pipeline transports natural gas from Canada's Atlantic natural gas fields to Dracut, Massachusetts, where it interfaces with the U.S. domestic network.



Source: EIA Natural Gas Annual

Alliance Pipeline Limited, a partnership of Enbridge and the Fort Chicago Energy Partners income fund, operates the 970-mile, 1.3-Bcf/d Alliance pipeline from Gordondale, Alberta to the Saskatchewan-Montana border. Its U.S.-based partner company operates the U.S. portion of the pipeline, which runs 890 miles into Illinois.

Liquefied Natural Gas (LNG)

Canadian natural gas companies have begun to explore the construction of LNG receiving terminals as a way to deal with perceived future supply shortfalls. Natural gas companies either could sell re-gasified LNG on the domestic market or re-export it to the United States. One project has already come onstream and several others are in various stages of the development process (see table). Some projects have also been suspended due to changing market factors. In addition, there has also been one LNG liquefaction terminal proposed, which would allow Canada to export LNG to the world market.

Proposed LNG Receiving Terminals in Canada

Name	Location	Status	Initial Capacity
Canaport LNG	New Brunswick	Operating	1.0 Bcf/d
Maple LNG	Nova Scotia	Pending Initial Construction	1.0 Bcf/d
Grassy Point	Newfoundland	Suspended	
Texada Island	British Colombia	Pending Regulatory Review	500 MMcf/d
Gros Cacouna	Quebec	Suspended	500 MMcf/d
Rabaska LNG	Quebec	Pending Initial Construction	500 MMcf/d
Grande-Anse	Quebec	Proposed	1.0 Bcf/d

New Brunswick

In New Brunswick, Canaport LNG, a consortium of Irving Oil and Repsol-YPF, began initial operations at its 1.2-Bcf/d terminal in June 2009. The terminal was the first operating LNG receiving terminal in the country. The Canaport project will provide natural gas for Irving Oil's refinery in St. John and local power plants. The project also has a connection to the Maritimes & Northeast Pipeline, facilitating potential exports to the United States.

Nova Scotia

Netherlands-based 4Gas is developing the Maple LNG project, a planned LNG terminal in Nova Scotia. The Maple LNG terminal could feed domestic customers or export natural gas to the

United States through the Maritimes & Northeast Pipeline. The project has received initial environmental approval. According to 4Gas, the project would have an initial send-out capacity of 1.0 Bcf/d.

Newfoundland

Newfoundland LNG has proposed to build an LNG receiving terminal at Grassy Point in Placentia Bay. In 2008, the project received environmental approval from the Canadian government. According to media accounts, the project was suspended in June 2009.

British Colombia

WestPac Terminals has proposed the construction of an LNG terminal at Texada Island, with initial send-out capacity of 500 MMcf/d. The project would also include an integrated, gas-fired power plant. According to media reports, the project is still seeking regulatory approval.

Quebec

Petro-Canada and TransCanada Pipelines proposed to build a 500-MMcf/d LNG receiving terminal at Gros Cacouna, on the St. Lawrence River. The project was suspended indefinitely in late 2008. A consortium of Enbridge, Gas Metro, and Gaz de France has proposed another project in the province, the Rabaska LNG terminal. Located in Levis, the Rabaska LNG project would have an initial send-out capacity of 500 MMcf/d. According to media sources, the project has received all regulatory approvals and is seeking LNG suppliers. Finally, Energia Grande-Anse has proposed to build an LNG receiving terminal along the Saguenay River in Quebec. That project is still in the preliminary stages of development.

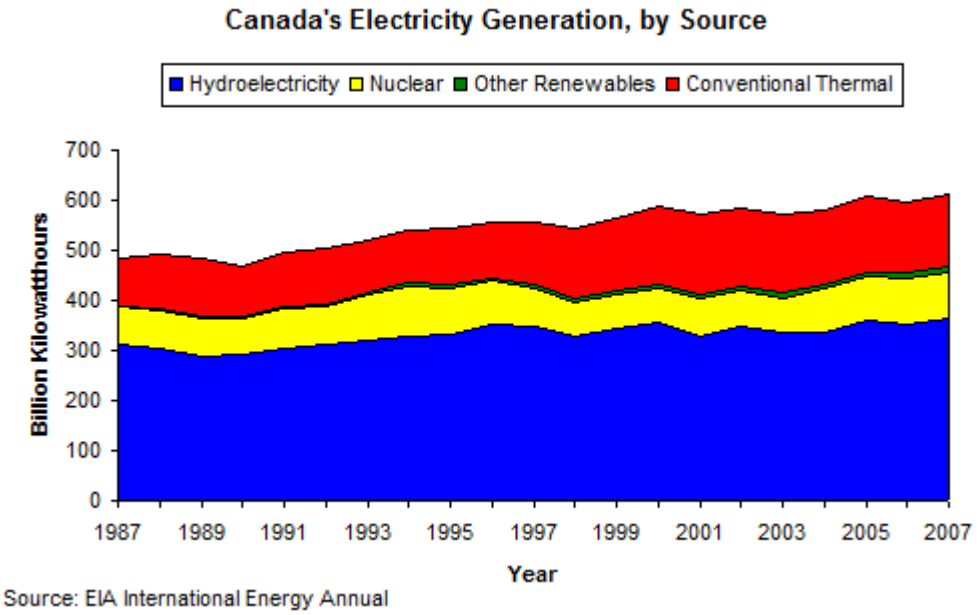
LNG Liquefaction

In late 2008, Kitimat LNG announced that it would shelf its planned LNG receiving terminal and would instead develop an LNG export terminal on the proposed site. The project would have a production capacity of 5 million metric tons per year and include a 300-mile natural gas pipeline to provide source gas for the terminal

Electricity

Canada is one of the world's largest producers of hydroelectricity.

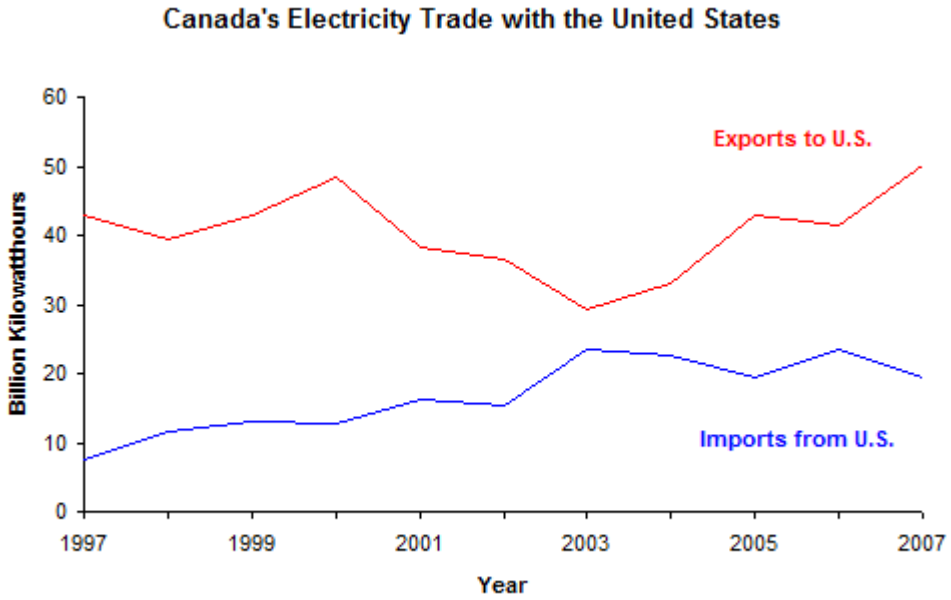
Canada had 126 gigawatts of installed electricity generating capacity in 2007. The country produced 595 billion kilowatt hours (Bkwh) of electric power in 2007 while consuming 530 Bkwh. Hydroelectricity represents the largest share of Canada's electricity generation, followed by conventional thermal and nuclear.



Source: EIA International Energy Annual

The electricity networks of Canada and the United States are highly integrated. In 2007, Canada exported 50.1 Bkwh of electricity to the United States while importing 19.6 Bkwh. Over the past

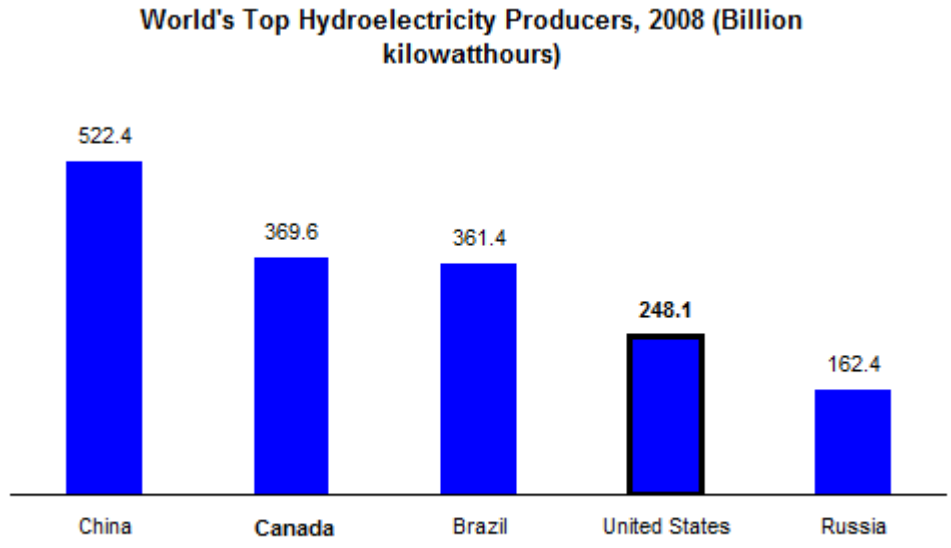
ten years, Canadian imports of electricity from the U.S. have increased by over 150 percent, while exports have remained relatively constant. Due to the increasing interdependence of the networks in both countries, a dependency made clear during the 2003 Northeast blackout, there have been greater efforts to increase cooperation and coordination between Canada and the U.S. A bilateral commission is planning the formation of the North American Electric Reliability Organization, an intergovernmental organization that would monitor network reliability, settle trans-border disputes, and formulate common industry standards.



Source: EIA Electric Power Annual 2006, Table 6.3; National Energy Board

Hydroelectricity

Canada is one of the world's largest producers of hydroelectricity, generating 370 Bkwh from the source in 2008. Canada was once the world's largest hydroelectricity producer, but China has overtaken that position in the last few years. Quebec's La Grande plant is one of the world's largest hydroelectric facilities, with an installed capacity of 15,000 MW. Quebec has the largest share of Canada's hydroelectric production, followed by British Columbia.



Source: EIA International Energy Annual

Profile

Energy Overview

Proven Oil Reserves (January 1, 2009E)	178 billion barrels
Oil Production (2008E)	3,350 thousand barrels per day
Oil Consumption (2008E)	2,320 thousand barrels per day
Crude Oil Distillation Capacity (2008E)	2,030 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2009E)	57.9 trillion cubic feet
Natural Gas Production (2007E)	6.6 trillion cubic feet
Natural Gas Consumption (2007E)	3.3 trillion cubic feet
Recoverable Coal Reserves (2005E)	7,251 million short tons
Coal Production (2007E)	76.5 million short tons
Coal Consumption (2007E)	68.7 million short tons
Electricity Installed Capacity (2007E)	125.6 gigawatts
Electricity Production (2006E)	595 billion kilowatt hours
Electricity Consumption (2006E)	530 billion kilowatt hours
Total Energy Consumption (2006E)	13.95 quadrillion Btus*, of which Oil (32%), Hydroelectricity (25%), Natural Gas (24%), Coal (10%), Nuclear (7%), Other Renewables (1%)
Total Per Capita Energy Consumption (2006E)	427 million Btus
Energy Intensity (2006E)	13,097 Btu per $2000-PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2006E)	614 million metric tons
Per-Capita, Energy-Related Carbon Dioxide Emissions (2006E)	18.8 metric tons
Carbon Dioxide Intensity (2006E)	0.58 Metric tons per thousand $2000-PPP**

Oil and Gas Industry

Organization	Private sector. Major companies include ExxonMobil (via its Imperial Oil subsidiary), Royal Dutch Shell, Suncor, EnCana, and Talisman Energy
Major Pipelines	Enbridge, Kinder Morgan, TransCanada, Alliance Pipeline Limited, Maritimes and Northeast.
Major Refineries (capacity, bbl/d)	Irving Oil St. John (250,000), Valero Energy Levis (215,000), Imperial Oil Edmonton (187,200)

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power.
**GDP figures from Global Insight estimates based on purchasing power parity (PPP) exchange rates.

Links

EIA Links
EIA – Canada Country Energy Profiles

U.S. Government
CIA World Factbook - Canada
U.S. Department of State Country Background Notes - Canada
U.S. Embassy in Canada
U.S. International Trade Administration, Country Commercial Guide - Canada

Associations and Institutions

Canadian Association of Oilwell Drilling Contractors
Canadian Association of Petroleum Producers
Canadian Centre for Energy Information
Canadian Energy Research Institute
Canadian Wind Energy Association
Energy Council of Canada
Oil Sands Discovery Centre
The Coal Association of Canada

Foreign Government Agencies
Alberta Department of Energy
Alberta Energy and Utilities Board
British Columbia Ministry of Energy and Mines
Manitoba Petroleum Division
National Energy Board of Canada
Natural Resources Canada
New Brunswick Ministry of Energy
Newfoundland and Labrador Ministry of Mines and Energy
Newfoundland Offshore Petroleum Board
Nova Scotia Offshore Petroleum Board
Québec Ministry of Energy
Saskatchewan Industry and Resources

Sources

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Alberta Energy and Utilities Board
Americas Oil and Gas Insights
British Columbia Ministry of Energy and Mines
BusinessWire
Calgary Herald
Cambridge Energy Research Associates
Canadian Association of Petroleum Producers
Canada 's National Energy Board
Canadian Business
Canadian Corporate Newswire
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Gas Daily
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Kinder Morgan

Marketwire
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Natural Gas Week
Natural Resources Canada
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U.S. Energy Information Administration
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Wall Street Journal
World Gas Intelligence
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